

CLAIMS

We claim:

1. A method of routing a group of nets comprising:
 - a) identifying different routing solutions for the nets in the group of nets;
 - b) selecting the best routing solution.
2. The method of claim 1, wherein all of the identified routing solutions includes a route for each of the nets in the group of nets.
3. The method of claim 1, wherein at least one of the identified routing solutions includes a route for each of the nets in the group of nets.
4. The method of claim 1, wherein some of the routing solutions include a route for some but not all of the nets in the group.
5. The method of claim 4, wherein at least one routing solution includes a route for all nets in the group.
6. The method of claim 1, wherein selecting the best routing solution comprises:
 - a) for each routing solution, computing a metric cost that quantifies the quality of the routing solution;
 - b) selecting the routing solution that has a metric cost that is the best computed metric cost.

7. The method of claim 6, wherein each routing solution includes a route for each net in a set of nets of the group of nets, wherein computing a metric cost for each particular routing solution comprises:

a) computing a metric cost for each route in the particular routing solution;

and

b) computing the metric cost for the particular routing solution from the metric cost of each route in the particular routing solution.

8. The method of claim 7, wherein the metric cost includes the length of the route.

9. The method of claim 7, wherein the metric cost of each route includes the length of the route.

10. The method of claim 6 further comprising:

a) specifying a metric-cost threshold before identifying the routing solutions;

b) wherein selecting the routing solution with the best metric cost includes selecting the routing solution that has a metric cost better than the other computed metric costs and better than the metric-cost threshold.

11. The method of claim 10, wherein none of the routing solutions have a metric cost better than the metric-cost threshold, the method further comprising:

a) incrementing the metric-cost threshold;

b) identifying a plurality of routing solutions for the nets in the group of nets,

- c) computing a metric cost for each routing solution;
- d) selecting the routing solution that has a metric cost better than the other computed metric costs and better than the metric-cost threshold.

12. The method of claim 11 wherein the best metric cost is an optimal metric cost of an optimal routing solution or is a metric cost within a predetermined percentage of the optimal metric cost of the optimal routing solution.

13. The method of claim 1, wherein selecting the best routing solution comprises selecting the best routing solution that can be identified by examining a particular maximum number of routes.

14. A computer program embedded on a computer readable medium, the computer program for routing a group of nets, the computer program comprising:

- a) a first set of instructions for identifying different routing solutions for the nets in the group of nets; and
- b) a second set of instructions for selecting the best routing solution.

15. The computer program of claim 14, wherein all of the identified routing solutions includes a route for each of the nets in the group of nets.

16. The computer program of claim 14, wherein at least one of the identified routing solutions includes a route for each of the nets in the group of nets.

17. The computer program of claim 14, wherein some of the routing solutions include a route for some but not all of the nets in the group.

18. The computer program of claim 17, wherein at least one routing solution includes a route for all nets in the group.

19. The computer program of claim 14, wherein selecting the best routing solution comprising:

a) a third set of instructions for computing, for each routing solution, a metric cost that quantifies the quality of the routing solution; and

b) a fourth set of instructions for selecting the routing solution that has the best metric cost.

20. The computer program of claim 19, wherein each routing solution includes a route for each net in a set of nets of the group of nets, wherein the third set of instructions comprises:

a) a fifth set of instructions for computing a metric cost for each route in each routing solution; and

b) a sixth set of instructions for computing the metric cost for each routing solution from the metric cost of each route in the routing solution.

21. The computer program of claim 20, wherein the metric cost includes the length of the route.

22. The computer program of claim 20, wherein the metric cost of each route includes the length of the route.

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